

US009636578B1

(12) United States Patent Ricky

(10) Patent No.: US 9,636,578 B1 (45) Date of Patent: May 2, 2017

(54) GOLF CLUB SIMULATION APPARATUS

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35

U.S.C. 154(b) by 84 days.

(21) Appl. No.: 14/613,160

(22) Filed: Feb. 3, 2015

Related U.S. Application Data

(60) Provisional application No. 61/935,064, filed on Feb. 3, 2014.

(51) Int. Cl.

A63F 13/245 (2014.01)

A63F 13/812 (2014.01)

A63F 13/211 (2014.01)

A63B 15/00 (2006.01)

A63B 21/045 (2006.01)

A63B 49/00 (2015.01)

(52) U.S. Cl.

(58) Field of Classification Search

CPC . A63B 2060/0081; A63B 60/26; A63B 60/54; A63B 49/00; A63B 15/00; A63B 15/005; A63B 21/045; A63F 13/812; A63F 13/211; A63F 13/245

See application file for complete search history.

(56) References Cited

U.S. PATENT DOCUMENTS

4,878,672 A *	11/1989	Lukasiewicz A63B 60/42
		473/233
6,361,451 B1*	3/2002	Masters A01K 87/00
		280/819
6,648,769 B2*	11/2003	Lee A63B 69/3614
		473/221
7,226,365 B2*	6/2007	Qualizza A63B 60/42
		137/14
7,621,859 B2*	11/2009	Kim A63B 69/3623
		473/219
7,798,910 B2*	9/2010	Leadbetter A63B 69/3614
		473/207
7,850,536 B1*	12/2010	Fitzgerald A63B 69/3614
		473/220
2006/0166738 A1*	7/2006	Eyestone A63B 15/005
		463/36

(Continued)

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(57) ABSTRACT

A golf club simulation apparatus includes an elongate shaft housing having opposed lower and upper ends and defining an interior area. A club head member is coupled to the lower end of the shaft housing. A battery is situated in one of the club head member and the shaft housing. An input member configured to receive club selection data is coupled to an outer surface of the shaft housing and electrically connected to the battery. A mass variability assembly is electrically connected to the input member and includes a weight member situated in the shaft housing that is selectively movable therein according to the club selection data. An electronics module having an angular sensing sensor is situated in the club head member. A bend variability assembly is included in the shaft housing for selectively altering a "feel characteristic" of the shaft housing during a swing motion.

18 Claims, 16 Drawing Sheets

